Syllabus for the **online**-only version of GTECH 709
Introduction to GIS
Spring 2015

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Goal/Rationale:

In this **online**-only course, we will cover the whole GIS production process from data modeling and acquisition to editing, analysis, and yes, cartographic output. GTECH 709 addresses students from both geography and other disciplines. Lecture examples, as well as hands-on exercises cover a range of application areas. The course itself is divided into two equally important parts: lectures, which introduce the concepts underlying all GIS, and lab exercises, which help you to familiarize yourself with many aspects of several software packages. The laboratory sessions will start at a very basic level, requiring little more than file handling and basic manipulation of Excel data. The course utilizes a variety of resources, including the energy and creativity of students to remain engaged in a purely **online** course.

Goals: This course is an introduction to GIS in general. We will be using a variety of **online**, web-based and desktop GIS in your lab assignments but the lectures concentrate on general principles and will note software-specific exceptions were applicable.

Objectives: You learn to see GIS as a process from conceptualizing spatial problems to different representations of spatial data, data sources, data organization, vector and raster analysis, and map production.

Outcomes: By the end of this course, you will be able to work independently with GIS, determine what is easy to do with GIS, what will take you considerable amounts of time, and which spatial research questions do not lend themselves to a GIS solution.

Textbooks: required: none.
 Recommended:
- Albrecht, J 2007. Key Concepts and Techniques in GIS. London: Sage. ISBN 978-1412910163
- de Smith M, Goodchild, M and P Longley 2011. Geospatial Analysis. Leicester: Winchelsea Press. Free access at http://www.spatialanalysisonline.com/ or as Amazon Kindle ebook (no ISBN).
- QGIS 2014. A Gentle Introduction to GIS. Free (like the software) and available online at http://docs.qgis.org/testing/en/docs/gentle_gis_introduction/

Pre-requisite: None (basic computer and numerical literacy expected)

Policies:

Attendance is crucial. Even in an **online** course, adherence to protocols and the course timetable is very important. The class-learning environment is *active learning*, meaning that most of the student performance is practical assignments rather than tests. Active involvement in the course is evidenced in part by undertaking the mechanics of the practical assignments systematically, and learning the tools by hours of practice. In so doing the tools soon come to be seen as a means to an end, rather than the end itself. For example, you will make many maps, and may get caught up in this creative activity, but remember that the maps are being made for particular purposes. Class participation includes timely attendance at laboratory sessions, and participation in BlackBoard discussion fora. Remember that a good part of your grade depends on class participation. Of course, you are expected to behave respectfully towards the instructor and the other students, by not imposing a dominating or threatening **online** presence.

Web-enhancement in the context of this course means that everything pertaining to this course will be communicated through BlackBoard. You are required to check the BlackBoard course site on a daily basis. All changes to the syllabus will be announced on the course home page. All lecture and lab materials are accessible through BlackBoard, and this is also the place where you upload your assignments to. Your exams and lab

assignments will be graded based on what you have uploaded to BlackBoard and this is where you will find your grades and may access course statistics that help you to assess your standing at any given time.

All email messages about this course should include GTECH 709 in the subject line, and be signed with your full name. You are addressing me professionally and I will not answer messages coming from "fun" addresses such as "sweetheart4u" or "slamdunk23"…..

Academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) is simply not acceptable. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures. Helping other students on use of the software is encouraged.
Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

Special accommodations for persons with disabilities are provided upon request. Please see the instructor if you feel the need for them. In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230

Assignments are always posted with their respective due date. It is in your best interests to keep up with the work and meet deadlines for assignments. Incomplete grades and time extensions are not an option for this course. There are no "extra-credit" assignments. You will submit assignments in electronic form.

Syllabus change policy: Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. All changes will/would be announced on BlackBoard, which you are expected to check on a daily basis.

Criteria for evaluation:

Evaluation of academic performance is based on your lab exercises, your software project and your participation according to the following breakdown:

Weekly quizzes	14%
Lab exercises	40%
Midterm exam	15%
Final exam	15%
Project	16%

Numeric scores will be used throughout the semester. The course letter grade will be determined only at the end of the semester, although guidance as to letter grade standing will be given along the way.

The lecture and lab material of traditional classroom sessions has been split into more than fifty smaller units. You should plan to spend on average some ten hours a week working on GTECH 709-related material – less in the beginning and more toward the end of the semester. It is your responsibility to reserve these many hours in your personal life.

Each student conducts an individual software project that involves GIS analysis of a substantial geographical problem. There are no requirements with respect to what software the student uses. In a similar vein, the application area (field) is to be chosen by the student, who is also responsible for gathering the necessary data. Basically, you can choose whatever topic you want, provided it has to do with *geographical analysis*; the stress is on both words! It is your responsibility to find a suitable project, which will have to be accepted by the instructor. A few ready-made projects made available on BlackBoard will provide you with some guidance but experience shows that motivation increases when students take pride in their own project.

I will not accommodate students who are late in their work or do not show up for the final exam. And, unless you produce a medical certificate or letter from the Office of AccessABILITY, I will not give the final grade of IN (incomplete).

Course Calendar:
This is an online class with no specific meeting times. Special dates that you should keep in mind are:

> 02/17, last date to drop the course
> 03/19, midterm exam
> 04/02, project proposal due
> 02/24, last date to drop without a W
> 05/14, project submission
> 05/19-20, final exam

Schedule (*subject to change*):

Week #	Topic
1	Introduction; semester overview; The opportunities of GIS
2	Principles of GIS
3	GIS data formats; Lab 1: First steps with ArcGIS Online
4	Data input; where to find data; Lab 2: First steps with Quantum GIS
5	US Census data and mapping; Lab 3: Joining data with Quantum GIS
6	Address matching and georeferences; Lab 4: Introduction to CartoDB
7	Organizing data in geospatial databases; Lab 5: Introduction to ArcCatalog
8	Projections and coordinate systems; Lab 6: Introduction to ArcMap
9	Midterm Exam; Setting up a GIS project
10	Basic GIS analysis operations; Lab 7: Spatial selection with ArcMap
11	Geoprocessing and modeling; Lab 8: Geoprocessing with ArcMap
12	Getting started with raster-based GIS analysis; Lab 9: Choice of ArcMap or SAGA GIS
13	Designing maps with GIS; Lab 10: Choice of ArcGIS Online, ArcMap, Quantum GIS or CartoDB
14	Project work and submission
15	Final Exam

It is the student's responsibility to regularly check the course website to become aware of changes to the schedule or other announcements.

Teaching Philosophy & Approach

Hunter College...
This is a place where students come to learn. It's a place where knowledge is developed and hopefully it's a place where students can see and participate in its development. Unlike previous schooling you don't have to be here, so we'll assume that you want to be here and that you are here to actively seek knowledge and skills.

With assumptions that you are (a) here of your own free will and (b) are actively seeking to gain knowledge and skills, there is only one fuzzy area (for some) - how to succeed! It's really quite simple: have fun. If you are enjoying what you are doing, you will succeed; if you are taking subjects or studying in a particular program and not enjoying it, you are unlikely to be successful.

A few words on success and enjoyment. Success is not just measured by your grade (but passing does help!), it is also measured by how you feel about what you are doing. You are the only person who can really judge whether you are successful - have you met your own expectations? Enjoyment does not necessarily mean stress free living (although maybe it is for some!). Taking only subjects that you were told were "easy" doesn't guarantee enjoyment; some of us require a challenge in life! Again, only you are in a position to determine what you find enjoyable.

A final thought on what a university is: this is also a place where faculty comes to learn...

GTECH 709 Intro to GIS
Students: to be successful you should be taking this subject because you want to take it, not because someone told you that you need to take it and you must be actively seeking knowledge and skills. This subject is a good participation "sport", but it's not a really good spectator event. You need to be proactive, be able to try something new, look at things from a new (spatial) perspective, ask questions, and read. You need to know when to take a break, get some fresh air, rest your eyes (a Buddhist philosophy is quite useful...). Watch the video lectures and introductions to practical lab sessions. Online courses put an additional burden on your self-discipline: plan your week as best as possible and make the commitment to spend the amount of time needed for you to be successful. Get a study partner or three, if this works for you.

Faculty: to be successful, I need to know that I've "made a difference" to at least some of my students, i.e., they feel successful. I'll provide a coherent subject structure, I will prepare (and update!) all material to the best of my abilities. I will hone my listening skills so that I can understand what difficulties you may be having and seek ways to resolve them. Furthermore, I am available and approachable; ask electronic questions at any time. If we agree that a face-to-face meeting would be more practicable let's arrange for a meeting time. Faculty have shown disappointing prowess at extra-sensory perception, please help us out!

We often lecture in subjects we are considered to have some expertise in; we are therefore fairly interested in the subject matter. We too are students in that we are continuing to learn new things in our areas of expertise and sometimes we are the ones who develop new knowledge in our areas of expertise!

Theory vs. practice: Sometimes lectures and labs will cover the same ground, but often, the best that can be done in a single semester is to provide just a "flavor" of the subject matter, something to whet your appetite, something to set the context for your own GIS work be it the cartographic studio of this course or in subsequent courses.

Finally...

The reason for this page of amateur pop psychology is twofold: (a) first I hope that prospective students take this subject for the right reasons (i.e. they believe that they will enjoy it) and are in the right frame of mind to be successful and (b) second, I hope that with a little mutual empathy the learning experience can be made better for both student and teacher. If we are not having fun, we are both doing something wrong!

I wish us a lot of fun in this course,